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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,517	02/28/2002	Douglas J. Vanesko	CISCP716	2156
26541	7590	01/25/2006	EXAMINER	
Cindy S. Kaplan P.O. BOX 2448 SARATOGA, CA 95070			TSEGAYE, SABA	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/086,517

Applicant(s)

VANESKO, DOUGLAS J.

Examiner

Saba Tsegaye

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/26/02</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 9 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Wolf (US 6,418,142 B1).

Claims 1 and 9, Wolf discloses, in fig. 1, a network element switch, comprising:

a pair of input nodes (I), each input node having  $2n$  inputs and  $2n$  outputs, where  $n$  is greater than or equal to 1;

a pair of center nodes (II), each center node receiving  $n$  inputs from each of the input nodes and having  $2n$  outputs (see 24);

a pair of output nodes (III), each output node receiving  $n$  inputs from each of the center nodes and having  $2n$  outputs (see 31 and 32); and

wherein an any-to-any mapping is not guaranteed from the pair of input nodes to the pair of output nodes (switching modules 21-25 are capable of splitting point-to-multipoint connections, this shows that any-to-any mapping is not guaranteed at switching modules 31-35).

Regarding claims 3 and 11, Wolf discloses the network element wherein  $n$  is greater than or equal to 2 (see fig. 1).

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3. Claim 21 is rejected under 35 U.S.C. 102(e) as being anticipated by Kam et al. (US 2002/0146003 A1).

Kam discloses, in figs. 2, 2A, and 3, a method of mapping signals across a network element switch having a plurality of input nodes (202), a plurality of center nodes (204) and a plurality of output nodes (206) comprising:

for each possible mapping of a specific signal across the network element switch, calculating the number of signals between each of the input nodes and center nodes (0011; 0037);

for each possible mapping of the specific signal across the network element switch, calculating the number of signals between each of the center nodes and output nodes (0011; 0023; 0042); and

selecting the mapping of the specific signal across the network element switch where the difference in the number of signals between each of the input nodes and center nodes is minimized and the difference in the number of signals between each of the center nodes and output nodes is minimized (011; 0032).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 2, 4-8, 10 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf in view of Kam et al. (US 2002/0146003 A1) hereafter Kam.

Regarding claims 2 and 10, Wolf discloses all the claim limitations as stated above, except for mapping links for signals between nodes is selected to minimize the differences between the number links between the nodes.

Kam teaches a load-sharing algorithm that can be used **to spread the component signal** among the mid-stage switching stags (see fig. 2A; 011; 0032).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wolf system to incorporate to be able to minimize the differences between the number links between the nodes, as suggested by Kam. The motivation is to route each component signal through the mid-stage switching module having the largest available bandwidth (see abstract).

Regarding claims 4-6 and 12-14, Wolf discloses all the claim limitations as stated above. Further, Wolf discloses that the center node is multi-cast (column 3, lines 25-29) and each input node is uni-cast (column 2, lines 49-50) (as in claims 5 and 13). However, Wolf does not expressly disclose each output node and each input node is bi-cast.

Kam teaches, in Fig. 2, a three-stage CLOS switch network, wherein the input signals may be dualcast (see 0025).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wolf apparatus to incorporate a set up where each input node and each

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output node could perform bi-cast. The motivation is to increase the whole switch capacity by utilizing non-blocking point-to-multipoint connections.

Regarding claims 7 and 15, Wolf discloses all the claim limitations as stated above. Further, Wolf discloses that the center node is multi-cast (column 3, lines 25-29) and each input node is uni-cast (column 2, lines 49-50) (as in claims 5 and 13). However, Wolf does not expressly disclose the inputs and outputs carry STS-48 signal.

Kam teaches in Fig. 2, a three-stage 2N CLOS switch network that receives a plurality of inputs of OC-N signals such as OC-48 (see 0025).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wolf apparatus to incorporate where the inputs and outputs carry STS-48 signal in order to provide a higher rate signals.

Regarding claims 8 and 16, Wolf discloses all the claim limitations as stated above. Further, Wolf discloses that the center node is multi-cast (column 3, lines 25-29) and each input node is uni-cast (column 2, lines 49-50) (as in claims 5 and 13). However, Wolf does not expressly disclose each node is a 2N Clos matrix.

Kam teaches, in Fig. 2, a three-stage 2N CLOS switch network (see 0008).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wolf apparatus to incorporate a 2N Clos matrix, as suggested by Kam. The motivation is to insure non-blockage connections between the input ports and the output ports.

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Regarding claims 17 and 19, Wolf discloses all the claim limitations as stated above, except for mapping links for signals between nodes is selected to minimize the differences between the number links between the nodes.

Kam teaches a load-sharing algorithm that can be used **to spread the component signal** among the mid-stage switching stags (see fig. 2A; 011; 0032).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wolf system to incorporate to be able to minimize the differences between the number links between the nodes, as suggested by Kam. The motivation is to route each component signal through the mid-stage switching module having the largest available bandwidth (see abstract).

Regarding claims 18 and 20 Wolf discloses the network element switch wherein an any-to-any mapping is not guaranteed from the pair of input nodes to the pair of output nodes (switching modules 21-25 are capable of splitting point-to-multipoint connections, this shows that any-to-any mapping is not guaranteed at switching modules 31-35).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lim (US 6,970,458 B1) discloses a method of increasing switch capacity.

Gonad (US 2002/0093952 A1) discloses a method for managing circuits in a multistage cross connect.

Fox (US 5,787,085) discloses data optimization system and method.

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Proctor et al. (US 5,703,879) discloses an ATM switching arrangement.

Swanson et al. (US 5,276,425) discloses method for broadcasting in CLOS switching networks by limiting the number of point-to-multipoint connections.


Yoshifuji (US 5,032,837) discloses method for expanding NxN three-stage switching network to 2Nx2N three-stage switching network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (571) 272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ST  
January 23, 2006

  
**JOHN PEZZLO**  
**PRIMARY EXAMINER**